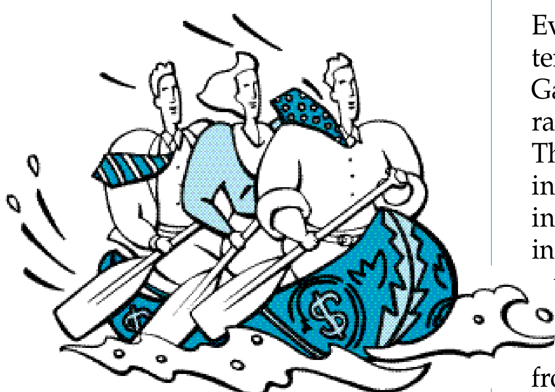
Your VESTED INTEREST

North Dakota State Investment Board December 1998

A SMOOTH RIDE

PENSION FUND INVESTMENT NEWS



Ever been on the Python, the terrifying roller coaster at Busch Gardens? How about white water rafting the mighty Colorado River? These are thrilling adventures indeed and not unlike today's investment marketplace. Intrepid investors have recently experienced the queasy gyrations and abrupt free falls of the roller coaster along with the treachery and frothiness of the white water foam. Entertaining? Yes, but who needs it? What if we had a way to participate in the exhilaration while avoiding smashing into the rocks? Loosely strap yourself into your seat and let's take a comforting ride down the pension fund investment accounting trail.

We all know how the markets work; some years are "good" and others, well, "not-so-good." Fortunately, the good years outnumber the bad because over the long run, the domestic and global economies are growing and successful competitors are thriving. But in spite of what some college professors may say, the market isn't a very rational place in the short run. When we look at year by year investment return numbers, why should some years be so high and others so low? Fickle indeed, and this is why we need to look at long-term averages of investment returns for the real story.

THE ACTUARY

No, the actuary is not an extinct species of bird, but rather a thriving breed of professionals who watch over the financial health of pension plans; plans such as TFFR and PERS. These pension mathematicians conduct annual studies of the pension plans. When practicing their arcane science, actuaries consider many factors including investment return, employee turnover rates, salary increases, employer and employee contributions to the plan, changes in costs and other measures of plan experience.

The TFFR and PERS plans are *defined benefit* plans. Retirees receive a benefit based on readily available formulas which incorporate years of service, salary and a "benefit multiplier." Whether the markets are up or down at the time of retirement is not of concern to the retiree. There are several technical reasons for this, but let's focus on one aspect of investment accounting that is unique to defined benefit plans.

SMOOTHING

Actuaries are like most of the rest of us…they don't like ugly surprises. And let's face it, from time to time you will get an ugly surprise if you are an investor. So how can we diminish the impact of the inevitable downturn? Smoothing!

continued on page 3

RIO

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FROM THE DIRECTOR'S CHAIR

AN UGLY QUARTER

Steve Cochrane
Investment Director

In our lead article, *A Smooth Ride*, we pounded home the point that investment returns measured over short periods such as one quarter should be looked at with a jaundiced eye. While recognizing the pitfalls of myopic focus on quarterly performance, let's dissect this one and see what's inside.

The quarter in question is the first of fiscal year 1999, beginning on July 1 and ending on September 30, 1998. This was a gut wrenching, emotion packed span of time for observers of daily market trends. Suddenly the "Goldilocks economy" had given way to global economic implosion, or so it seemed. Russia was going down the tubes, Japan was on the ropes, Southeast Asia was deflating and crisis in Latin America was around the corner. The U.S. trade deficit climbed, corporate profit growth shrank and domestic political intrigue fueled the fires of uncertainty. As America turned her eyes to baseball for chicken soup, the monthly brokerage statements began to pour in and man, they were ugly!

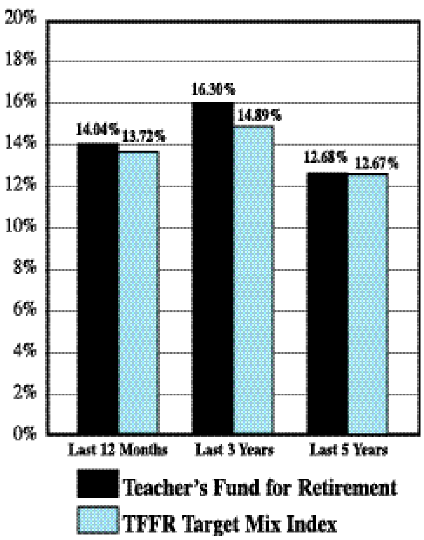
The October-November rebound has certainly taken the sting out of the quarter, but before we return to semi-conscious complacency, let's examine the role played by "asset allocation" or, the art of scientifically distributing one's eggs among many baskets. Staying true to form, I will continue to use the PERS fund as our example.

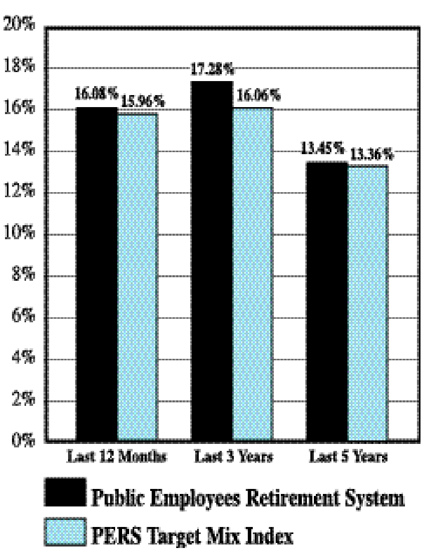
PERS uses ten different asset classes for investment purposes. Four of these are exposed to U.S. and international stock markets where performance measurement benchmarks were down between ten and 25 percent for the three months. Bonds and real estate, representing 47 percent of the portfolio, came to the rescue with positive returns.

When all the dust had settled, we found that the PERS fund had experienced a negative quarterly return of 5.53 percent, quite satisfying in the face of such financial drama. The TFFR fund shared a comparable experience.

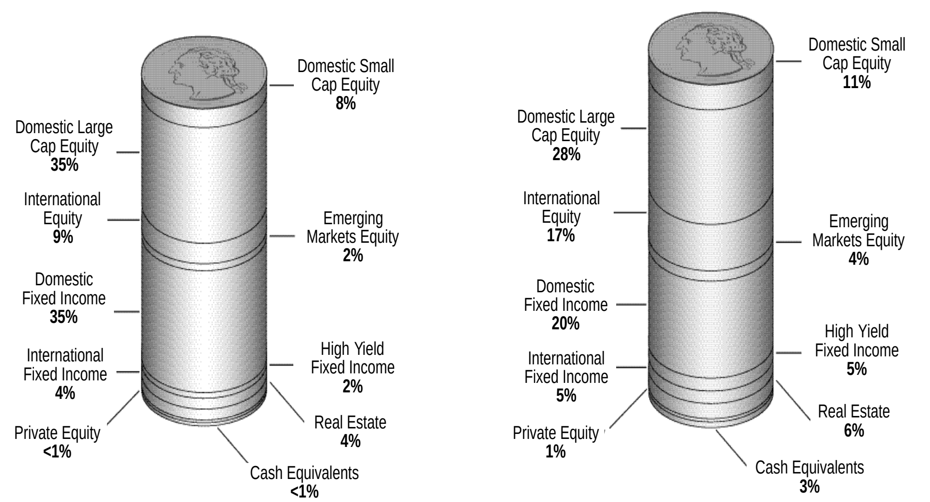
By investing in many different types of assets, we are able to limit our risks. Thanks to the diversification brought about through asset allocation, even the most difficult markets don't have to be so ugly.

INVESTMENT PERFORMANCE SUMMARY – TFFR/PERS
June 30, 1998





ACTUALASSETALLOCATION – June 30, 1998



Public Employees Retirement System
Total Assets: $1,032,088,954

Teachers'Fund For Retirement
Total Assets: $1,125,712,563

A SMOOTH RIDE *continued from page one*

Here's how it works:

Each year, a pension fund experiences an investment return. Let's use the PERS fund to illustrate this.

As you can see, investment returns from year to year can be quite volatile *(Table 1)*. If the actuary were to use only the past year's performance in the annual review, the fortunes of the fund would ebb and flow quite dramatically. Because of the long-term nature of the investment trust, the actuary is free to use a methodology called "smoothing." Instead of using one-year performance, the actuary will use the performance of the most recent "rolling 5-year period." In essence, the actuary will use 20 percent of each of the last five years' investment returns to sum up the investment performance to be plugged in to the actuarial evaluation.

What is a "rolling 5-year period?"

For periods ended in 1995, we look at 1991-1995.

Next year, we drop the first year and add the new one.

For periods ended in 1996, we look at 1992-1996.

And so on…

Let's look at fiscal year 1994. As you may recall, this is the year the Fed tightened, interest rates unexpectedly moved up, and economic distress in the emerging markets spread jitters throughout the investment world. PERS experienced a return for the year of 1.88 percent. Thanks to the smoothing technique, however, PERS was able to post a return of 8.9 percent *(Table 2)* – more than enough to meet the actuarial investment return requirements to maintain a positive experience.

Now let's think about *this* fiscal year. The first quarter got off to a rocky start as several sectors of the stock market took heavy losses.

Table 1
Fiscal Year Investment Performance History (%) – PERS

FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99 Q1
9.47	4.15	13.69	15.32	1.88	14.34	16.09	19.71	16.07	-5.53

Table 2
Smoothing 1990-1994

FY	Return	x 20%
1990	9.47	1.89
1991	4.15	.083
1992	13.69	2.74
1993	15.32	3.06
1994	1.88	0.38
		= 8.90

While the S&P 500 index of large companies was down about 10 percent, the real carnage was in the smaller companies and emerging markets where negative returns were in excess of 20 percent. Thanks to our diversification of assets, the quarterly return for the total PERS fund was a comparatively palatable negative 5.53 percent.

What if the fund did no better for the rest of the year and the fiscal year 1999 return for PERS was –5.53 percent? Once again, smoothing helps the medicine go down as the rolling five-year return would be a robust 12.13 percent *(Table 3)*. In fact, the PERS fund would have to lose more than 25 percent in FY99 to have a rolling five-year return that would negatively impact the fund from an actuarial perspective!

Table 3
Smoothing 1995-1999

FY	Return	x 20%
1995	14.34	2.87
1996	16.09	3.22
1997	19.71	3.94
1998	16.07	3.21
1999	-5.53	-1.11
		= 12.13

SUMMARY

In essence, smoothing recognizes the long-term nature of investment. Measuring investment returns over arbitrary periods such as one month or one quarter can significantly distort the true underlying secular trend in valuations. Even one-year periods are too short to capture the mega-trends. Smoothing acknowledges that the highs are too high and the lows are too low and the long-term "truth" lies somewhere in between. By eliminating the short-term bias towards irrational valuation, smoothing adds consistency and a dramatic reduction in volatility of returns.

As you can see, accounting for a defined benefit plan accommodates the long-term nature of the fund and enables it to meet its financial obligations. Smoothing is but one tool that keeps the promise of our retirement benefits sound!

Note: Mathematical calculations in this article have been simplified for illustrative purposes. Actuarial calculations may differ slightly.

Y2K: WE'RE ON OUR WAY!

Early this year we began to receive reports from our various money managers indicating their progress towards compliance. We formalized this reporting procedure in July by requesting our investment managers and other related service providers to submit the following information:

- A comprehensive current status report relating to Y2K readiness.
- Quarterly preparedness updates commencing October 1, 1998.

We are keeping close tabs on this extremely important situation!

Pictured, left to right, front row: Norman Stuhlmiller, TFFR; Barbara Evanson, TFFR; Rosemarie Myrdal, Lt. Governor; Kathi Gilmore, State Treasurer; David Gunkel, PERS.
Pictured left to right, back row: Robert Olheiser, State Land Commissioner; Mark Sanford, TFFR; Howard Sage, PERS; Glenn Pomeroy, State Insurance Commissioner; Pat Traynor, Executive Director, Workers Compensation Bureau.
Not pictured: Walt Stack, PERS.

THE STATE INVESTMENT BOARD

With eleven members, we have just enough players to suit up a football team. But these folks' skills are probably put to their best use in the boardroom as opposed to the gridiron.

The melding of a diversified assortment of professional orientations, experience, and investor profiles brings great synergy to this dynamic group.

Collectively, the State Investment Board (SIB) sets policy and oversees the administrative wellbeing of some $3 billion in investments. You can rest assured that your interests are prudently represented by this eclectic group of fiduciaries.

Of the eleven members, five participate as required by their official governmental post. The six remaining SIB positions are held by three representatives each from the boards of the Public Employees Retirement System and the Teachers' Fund for Retirement.

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